



Field Project Atelier 2025

Instructors

prof. Michele Lanza
ing. Mauro Prevostini



Introduction

Introduction

This Booklet describes the list of field project positions available at the companies participating to the Field Project Atelier (SA5) during Fall semester 2025. The Field Project Atelier consists of an experience in collaboration with a company. The goal is for the students to obtain hands-on experience with real world problems. The Field Project Atelier can be done individually or as a group, depending on the given context.

Since 2014 the Faculty of Informatics collaborated in this context with 54 companies offering field projects to 227 students.

This year we have 17 companies on board, offering a total of 32 positions.

FPA 2025 Schedule

The Field Project Atelier 2025 will take place from September 19 to December 12, 2025, at the company on Thursdays and Fridays.

Important dates are as follows:

- September 18: Kick-off meeting at USI
- September 19: Beginning of the field project at the company
- October 22: Update meeting students-instructors at USI
- November 26: Update meeting students-instructors at USI
- December 12: Closing session at USI

All meeting mentioned above are mandatory in order to obtain the 9 ECTS.

Students' Duties

You are given time until May 20 to express your preferences ranked as 1, 2, 3, 4 by means of the following form (first-in first-served):


<https://sa5.si.usi.ch/>

Should a student not do so, he/she will be assigned a project.



List of Field Projects

4BMC Sagl

	
Website	https://4bmc.ch
Contact	Carlo Vespa, carlo@4bmc.ch
Number of available positions	1
Address	Via Luganetto 4, 6962 Viganello
Mode of Work	To be defined
Languages Requested	English
Previous Field Project Atelier SA5 participation	2022, 2023, 2024

Company Description

4BMC is a Solutions Agency that helps SMEs harness the power of advanced technologies, including artificial intelligence (AI) and blockchain, to improve their operations and offerings. The agency focuses on leveraging these technologies to provide innovative solutions and services that enhance efficiency, security, and market insights. With a suite of tools ranging from AI analytics to blockchain applications, 4BMC aims to equip businesses with the capabilities to thrive in a digital landscape,

Project Title

Bandosubito

Project Description

The student will have the opportunity to engage in a dynamic and innovative environment of 4BMC by working on Bandosubito, an AI-based platform revolutionizing the way private individuals and organizations access subsidized finance opportunities. By leveraging the power of artificial intelligence, Bandosubito simplifies the complex landscape of European, national, and local grants, matching the unique characteristics and goals of users with the most suitable funding opportunities available in its extensive database.

Working on the Bandosubito project, the student could be involved in a variety of technical aspects, depending on their skills and interests. For those inclined towards front-end development, tasks might include enhancing the user interface and user experience (UI/UX) of the web application. This could involve designing and implementing intuitive and attractive interfaces, improving the navigation flow, or integrating interactive features that make the search and application process as smooth as possible for users.

Alternatively, students with a passion for back-end development might work on the infrastructure of the web application. This could involve developing and maintaining the servers, databases, and application logic that power Bandosubito. One critical task could be implementing web scrapers to continually update the grant database with the latest funding opportunities. This requires a keen eye for data extraction, transformation, and loading (ETL) processes, as well as an understanding of how to maintain data integrity and relevance.


Moreover, students may have the chance to add new features to the platform, such as personalized grant recommendations based on user profiles, automated alerts for new grants matching specific criteria, or tools to streamline the application process for grants. These enhancements would not only improve the user experience but also increase the value Bandosubito provides to its users, making it an indispensable tool in the search for subsidized financing.

Working on Bandosubito offers students a unique opportunity to apply their technical skills to real-world challenges, contributing to a product that has a tangible impact on individuals and organizations seeking financial support for their projects. Through this experience, students can gain valuable insights into the intersection of technology, finance, and public policy, while also honing their development skills in a practical setting.

Technologies to be used

python (django), html, css, javascript (vue3)

Acer Europe AG

	
Website	https://acer.com
Contact	Project 1) emanuele.meazzo@gmail.com Project 2) Pietro Rossi, pietro.rossi@acer.com
Number of available positions	Project 1) 1 Project 2) 1
Address	Via della Posta 28, 6934 Bioggio
Mode of Work	To be defined
Languages Requested	Italian and English
Previous Field Project Atelier SA5 participation	None

Company Description

Acer Inc (Acer) is global information and communications technology (ICT) company that develops, designs, markets, and exports IT products. The company's product portfolio comprises personal computers, projectors, tablet PCs, smartphones, wearables, smart devices, monitors, servers, gaming products and ICT devices.

Project 1

Project Title

Develop new features for our AI Agent

Project Description

Acer has developed an advanced Generative AI assistant, using the latest cloud technologies
The product is a unique offering on the market and it's being proposed to third party customers too
Your task will be to develop a novel feature to integrate in the AI Agent to make it even more powerful

Technologies to be used

Python, REST API, Generative AI

Project 2

Project Title

Enhancing and Extending Acer EMEA Internal Automation Platform


Project Description

Acer EMEA has architected and internally developed an event-driven automation platform to support part of its daily IT operations. It is responsible of handling hundreds of thousands of events, generated by our ticketing system, systems, cloud platforms, or identity provider. This system intelligently performs necessary actions based on these events, employing a wide range of technologies, including AI. This project focuses on extending and refining this platform through the development of new automation modules, the enhancement of existing ones, and architectural optimization, working alongside our internal teams.

Technologies to be used

Python, PowerShell, AWS, Azure, OCI

Alten Switzerland AG

	
Website	https://www.alten.com/
Contact	SARA ORSI sara.orsi@alten.ch
Number of available positions	2
Address	Riedstrasse 11, 6330 Cham / ZG - Switzerland (Field Project Address: Corso San Gottardo 14, 6830 Chiasso)
Mode of Work	In Presence
Languages Requested	Italian and English
Previous Field Project Atelier SA5 participation	2024

Company Description

Alten is a Consultancy Firm providing support with a wide range of expertise in Engineering and IT Services in order to meet the technological needs of its clients. The Skills and Offers Department brings together and coordinates at the transnational level, specialists and consultants, experts in their profession who support our clients, in more than 30 countries, in their issues of digital transformation, innovation, product development, supply chain, change management, etc.

Project Title

Test Automation in Continuous Integration

Project Description

Project Overview:

This project will create a continuous integration (CI) pipeline for a Java web application. The pipeline will use the following tools:

- GitHub for source code management
- Maven for build automation
- JUnit for unit testing
- Selenium for integration testing
- Jenkins for CI orchestration

Project Setup:

1. Create a GitHub repository for the web application.
2. Create a Maven project for the web application.
3. Add JUnit unit tests for the web application.
4. Add Selenium integration tests for the web application (this stage must be configured from an external yml file)
5. Install Jenkins and configure it to run the Maven build and the JUnit and Selenium tests.

CI Pipeline:

The CI pipeline will consist of the following stages:

1. Checkout: The code from the GitHub repository will be checked out into the Jenkins workspace.
2. Build: The Maven build will be used to build the web application.
3. Unit Test: The JUnit unit tests will be run to verify the correctness of the web application.
4. Integration Test: The Selenium integration tests will be run to verify the functionality of the web application.
5. Non Regression Test: This stage execute all the functional tests to proof that the previous functionality works fine with the new implementation.
6. Deploy: If all of the tests pass, the web application will be deployed to a staging environment.

Project Benefits:

The CI pipeline will provide the following benefits:

- Early detection of errors: Errors will be detected early in the development process, which will reduce the cost of fixing them.
- Improved quality: The CI pipeline will help to improve the quality of the web application by ensuring that it is well-tested.
- Increased productivity: The CI pipeline will help to increase the productivity of developers by automating the build and test processes.


Conclusion:

This project demonstrates how to create a CI pipeline for a Java web application. The CI pipeline can be used to improve the quality and productivity of the development process.

Technologies to be used

Java, JUnit, GitHub, Maven, Selenium, Jenkins

AnswerConsulting SA

	
Website	https://www.answerconsulting.ch/
Contact	Jacopo Malnati
Number of available positions	2
Address	Via Penate 4, 6850, Mendrisio
Mode of Work	Hybrid (50% in presence and 50% remote)
Languages Requested	Italian and English
Previous Field Project Atelier SA5 participation	2024

Company Description

We help organizations reinvent Enterprise Content Management (ECM) through agile technology, world-class technical expertise, and strategic vision (and to you it means nothing, I get it. We are a cool, young team of hardcode coders, motorbikers, and amateur astronomers having fun in the office).

Project Title

AI-Driven Automation for Enterprise Content and Workflow Management

Project Description

This internship project focuses on the application of Artificial Intelligence within the domain of Enterprise Content Management (ECM), document management, and workflow automation in large-scale data environments. The initiative aims to explore and implement advanced AI techniques—such as Generative AI and Retrieval-Augmented Generation (RAG)—to enhance document search, content summarization, and automated document generation. Operating in a big data context with millions of documents and thousands of concurrent workflows, the project places particular emphasis on chaining AI processes, where the output of one AI task becomes the input for another. This approach is designed to support complex user assistance scenarios and optimize operational efficiency in enterprise-grade information systems.

Technologies to be used

Groovy, JavaScript

Banana.ch

	
Website	www.banana.ch
Contact	José Del Romano jose@banana.ch
Number of available positions	Project 1) 1 Project 2) 1
Address	Via la Santa 7, 6962 Viganello
Mode of Work	Hybrid (50% in presence and 50% remote)
Languages Requested	Project 1) English Project 2) Italian and English
Previous Field Project Atelier SA5 participation	2019, 2020, 2021, 2022, 2023, 2024

Company Description

Banana.ch SA was founded in Lugano in 1990. The business is focused on the production and sale of Banana Accounting+, a financial accounting software for enterprising people, small businesses, association managers and individuals. Banana is a spreadsheet-inspired accounting software, has sold more than 300000 licenses worldwide and is a leader in Switzerland. In 2002 was the first accounting software in the world to introduce blockchain technology to ensure the legal validity of accounting data.

Project 1

Project Title

Cross-Platform PDF Generation in C++ Applications

Project Description

Banana Accounting plus is a cross-platform desktop application developed in C++. It currently uses the open-source library libHaru to generate PDF documents. As the application expands to new platforms—including macOS, Windows, Linux, iOS, Android, and WebAssembly—there is growing interest in exploring additional PDF generation solutions that can ensure broad compatibility and modern features.

The aim is to explore and evaluate alternative C++ libraries that support PDF creation across multiple platforms, with the possibility of integrating one of them into the existing application stack.

Project Objectives:

The goal of this semester project is to analyze, compare, and experimentally integrate a modern C++ PDF generation library. Students will:

- Research and select at least one alternative library to libHaru that supports cross-platform PDF generation.
- Integrate the selected library into a small-scale prototype.
- Evaluate the selected library in terms of:
 - Cross-platform support (desktop, mobile, WebAssembly)
 - Text and font management
 - Layout capabilities and additional features (e.g., images, tables)
 - Performance and ease of integration
 - Licensing and long-term maintainability

Expected Outcomes:

- A functioning prototype that demonstrates PDF creation using the selected library.
- A comparative report covering technical and practical aspects of the libraries evaluated.
- Optional: A reusable integration module or wrapper for future use in the main application.

Skills Required / To Be Developed:

- C++ development and use of build tools (e.g., CMake)
- Integration of third-party libraries
- Cross-platform software development practices
- Technical writing and structured analysis

Why This Project Matters:

The project offers a practical opportunity to deal with a real-world software development scenario. It allows students to sharpen their C++ skills, learn how to evaluate and integrate libraries, and gain hands-on experience with cross-platform development challenges, especially in the context of document and reporting systems.

Technologies to be used

c++, Qt, CMake, PDF, varius OS

Project 2

Project Title

Offline AI Integration in Native Desktop Applications

Project Description

Modern AI solutions such as ChatGPT and DeepSeek are powered by large-scale cloud infrastructure, capable of processing vast datasets in real time. While these services enable impressive capabilities, they come with trade-offs: high energy consumption, network dependency, and privacy concerns.

However, not all AI tasks require massive models or cloud-based computation. Many use cases—such as document summarization, keyword extraction, or smart search—can be efficiently handled by smaller models running locally on a user's device.

Project Objectives:

This project explores how to bring AI capabilities to the desktop by integrating a lightweight, local AI model into a native C++ desktop application. Students will:

- Select a suitable open-source AI model or library (e.g., ONNX Runtime, MLC, llama.cpp, or similar) that can run efficiently on local machines.
- Design and implement a proof-of-concept demonstrating the model integrated into a C++ application (e.g., for text analysis, natural language queries, or other AI-powered features).
- Evaluate the solution in terms of:
 - Performance and responsiveness
 - Resource usage (CPU, RAM)
 - Ease of integration and portability
 - Benefits for privacy and offline usage

Expected Outcomes:

- A working desktop prototype demonstrating offline AI capabilities.
- A technical report detailing the chosen model, integration process, and performance results.
- Optional: Benchmarking against cloud-based solutions (in terms of latency or resource use).

Skills Required / To Be Developed:

- C++ development and application architecture
- Understanding of basic machine learning concepts
- Integration of AI runtimes or libraries (e.g., ONNX, llama.cpp)
- Performance evaluation and profiling
- Technical documentation and communication


Why This Project Matters:

This project allows students to explore the growing field of edge AI—bringing intelligence directly to users' devices. It promotes awareness of energy efficiency, privacy-first design, and practical integration of modern AI into real-world desktop applications.

Technologies to be used

Qt Framework, c++, CMake, AI

Brightside Capital

 BRIGHTSIDE CAPITAL	
Website	https://brightside-capital.com/
Contact	Anxhela Vendresha, anxhela.vendresha@brightside-capital.com
Number of available positions	3
Address	Via Balestra 11, 6900 Lugano
Mode of Work	In Presence
Languages Requested	English
Previous Field Project Atelier SA5 participation	2020, 2021, 2022, 2023, 2024

Company Description

Family Office - A financial advisor for Ultra High Net Worth Individuals or Families. We manage the interests of 22 Italian families through investment decision and spot-on reporting. We have a mixed imprint between the American world (young motivated team, competitive environment, meritocracy and team before the individual) and Latin culture, promoting, within that framework, your own creativity.

Project Title

Fintech Hub - Integration of First-Class Finance Software and Automating the Delivery of Data

Project Description

About Us

We are a Multi Family Office based in Lugano, specializing in Wealth Management and Consolidation Services for Ultra High Net Worth Individuals (UHNWI). Over the past five years, our Consolidation Services have experienced the most significant growth. Compared to the Wealth Management side of our business, this service generates lower revenue per asset under management and requires more operational maintenance, but it has strong potential for scalability and revenue expansion.

The key challenge in scaling our Consolidation Services lies in its lower margins and the need for highly skilled personnel to provide the high-touch service that our clients expect. To address this, we developed an MVP of a technology hub that integrates custodial data with external financial software, ensuring continuous data monitoring, seamless integration, and automating manual verification processes. The platform has been designed with a scalable architecture, enabling future commercialization as a SaaS product.

Our objective for 2025 is to enhance the hub's scalability by implementing advanced automation, expanding its integration capabilities, and optimizing its overall efficiency.

Your Role

During your field project, you will collaborate with our software development team, which consists of two senior software developers and three junior developers (all former USI students, under 30). You will contribute to:

Enhancing our central hub, which manages and monitors integrated financial data.

Developing new data integrations, processing standard file formats (CSV, Excel, etc.) for seamless system import.

Optimizing integration workflows with existing financial software through APIs or secure file transfers.

Creating new automation processes to streamline operations and expand our service offering.

Improving data management by integrating additional data sources for greater operational efficiency.

Research opportunities: If interested, you may contribute to advanced projects, with the possibility of developing a university thesis in collaboration with our company.

What We Offer

Hands-on experience working on a cutting-edge fintech platform in a fast-paced environment.

Mentorship and technical support from experienced professionals.


Opportunities for career growth and involvement in strategic projects.

Technologies to be used

Python, Django, Pandas, AWS, SFTP, API, Asynchronous/Synchronous Programming, Web Developing, Vue

**If you have questions, please contact Anxhela Vendresha (mail above) or our HR manager:
gilberto.moretti@brightside-capital.com**

CodeLounge

	
Website	https://codelounge.si.usi.ch/
Contact	Roberto Minelli (roberto.minelli@usi.ch)
Number of available positions	1
Address	USI, Campus Est
Mode of Work	Hybrid (50% in presence and 50% remote)
Languages Requested	Italian and English
Previous Field Project Atelier SA5 participation	2017, 2018, 2019, 2020, 2021, 2023, 2024

Company Description

CodeLounge è il centro di ricerca e sviluppo del Software Institute - USI, Lugano. CodeLounge riunisce competenze provenienti dal mondo accademico e industriale, con due obiettivi principali: spingere le idee oltre i prototipi, realizzando prodotti reali, e svolgere ricerca applicata nelle aree dello sviluppo del software, della visualizzazione, dell'evoluzione e dell'analisi. Essendo parte del Software Institute, collabora con i gruppi di ricerca e promuove progetti interdisciplinari.

Project Title

Integration of USI Feeds in SI Website


Project Description

The project consists in developing a new page on the Software Institute website (<http://si.usi.ch/>) that integrates with the USI Feeds REST API to display news and events specifically related to the Software Institute. The main task is to fetch data from the centralized USI Feeds system and implement a filtering mechanism that extracts only the content relevant to the Institute, based on predefined tags, keywords, or metadata. The filtered content will be rendered on a dedicated page within the SI website, styled consistently with the existing design. The integration must ensure that the displayed information is updated automatically as new items are published via the API. The solution should include proper error handling, and optionally caching, to ensure a smooth and reliable user experience. The result will be a dynamic, self-updating section of the SI website that keeps visitors informed about the latest news and upcoming events related to the Software Institute.

Technologies to be used

The SI website is built with Jekyll. Data can be filtered client-side using JavaScript, or better pre-fetched at build time using a script for better performance.

CyberTel Group SAGL

 CyberTel Group	
Website	https://www.cybertelgroup.com/
Contact	Marco Moscini marco.moscini@cybertelgroup.com
Number of available positions	2
Address	via madonnetta 15
Mode of Work	Remote
Languages Requested	English
Previous Field Project Atelier SA5 participation	2024

Company Description

Cybertel Group SAGL specializes in simplifying cybersecurity and IT challenges for small and medium-sized businesses. We offer tailored solutions that empower our clients by helping them reduce costs, and enhance efficiency. Through consultation, hardware, software, and training services in IT, power, and telecommunications, we're dedicated to helping our clientele make informed, secure, and cost-effective decisions for sustained success in the digital age.

Project Title

Intelligent Environmental Monitoring for Sustainable Agriculture

Project Description

The environment in which crops grow is of vital importance for agricultural productivity and the quality of yields. In this context, the use of an Internet of Things (IoT) based environmental monitoring system can play a crucial role by providing real-time information on parameters such as temperature, humidity, soil moisture, and other essential agricultural indicators. This project represents a unique opportunity for university students to apply their theoretical knowledge in a practical and interdisciplinary context.

Project Objectives- The primary objective is to develop an IoT system capable of monitoring the agricultural environment in real-time, optimizing resource usage, and improving the sustainability of agricultural practices. The project aims to provide students with practical skills in programming, engineering, mathematics, and environmental sciences.

Hardware and Sensor Development- The core of our IoT system will be the sensors, essential for detecting environmental parameters. We will use a combination of sensors to monitor:

- Nitrogen (N)
- Phosphorus (P)
- Potassium (K)
- pH
- Electrical conductivity
- Temperature and humidity
- Light intensity for monitoring sunlight exposure
- CO₂ levels for air quality control in greenhouses

Network Software and Data Transmission- After collecting data from the sensors, it will be necessary to efficiently transmit them to a central server for processing. We will use communication protocols such as MQTT (Message Queuing Telemetry Transport) for data transmission over the Internet or local network. Network software programming will require knowledge of languages such as Python and Java for managing connections and data transmission.

Data Analysis and Mobile Interface- Once transmitted to the server, the data will be processed and stored. Subsequently, we will develop a mobile application for Android and iOS that will allow users to:

- View real-time data through graphs, maps, and tables
- Receive personalized notifications, such as nutrient deficiency alerts
- Analyze historical data and monitor trends
- Integrate weather forecasts for proactive planning

Advanced Features and Automation- To enhance system efficiency, we will implement:

- Fertilization recommendations based on N-P-K levels
- Sensor health monitoring for predictive maintenance
- AI-based decision support to suggest crop management strategies
- Anomaly detection to alert in case of unusual environmental changes


Project Benefits- This project offers numerous advantages, both for students and the agricultural community:

- Development of Practical Skills
- Positive Environmental Impact
- Interdisciplinary Experience

Technologies to be used

Linux, MQTT, Python, Java, Javascript, Flutter

DEC Energy

	
Website	www.dec-energy.ch
Contact	Manuel Bonù, manuel.bonu@dec-energy.ch
Number of available positions	1
Address	Via la Santa 1
Mode of Work	In Presence
Languages Requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

At DEC Energy, we're providing FinTech and SaaS products for corporates to replace the expensive and endless stack of solutions adopted by Sustainability & Energy Managers. We're starting by making profitable Scope 2 emission reduction! On our platform, corporates can rent solar panels located around Europe and self-generate Guarantees of Origin while earning money. We're on a mission to create the final Renewable Energy Platform for Corporate Sustainability.

Project Title

Public Profile for Corporate Sustainability

Project Description

At DEC Energy, we're building FinTech and SaaS products for corporations to replace the expensive and endless stack of solutions adopted by sustainability & energy managers.

Taking part in this project, you will focus on developing an intuitive, engaging, and responsive frontend for a public page to display data related to the sustainable actions of a company. The page will be a sort of company profile through which our corporate customers can publicly showcase their sustainability initiatives and key impact metrics.

Responsibilities:

- Designing and developing a visually appealing and user-friendly frontend interface using modern web technologies (see below).
- Ensuring the page is responsive and accessible across various devices and screen sizes.
- Integrating with existing backend APIs to dynamically fetch and display sustainability data.
- Implementing interactive elements, such as data visualizations, charts, and infographics, to effectively communicate complex sustainability metrics.

Technologies to be used

TypeScript, JavaScript, ReactJS, NextJS, TailwindCSS, Git

Duferco

Duferco	
Website	www.duferco.com
Contact	Fabio Iannello, fabio.iannello@duferco.com
Number of available positions	2
Address	Via Trevano 2A, 6900 Lugano
Mode of Work	Hybrid (50% in presence and 50% remote)
Languages Requested	Italian and English
Previous Field Project Atelier SA5 participation	2021, 2022, 2023, 2024

Company Description

Duferco is a global company with diverse interests spanning energy retail and trading, steel manufacturing, insurance, and logistics.

Project Title

AI Agent Assistant for Production Reporting and Insights in Industrial Environments

Project Description

This project aims to develop a mobile application that leverages AI agents to simplify and enhance production reporting within industrial settings. The app will allow users to interact with complex production data through natural language, transforming how information is accessed, analyzed, and understood on the shop floor or in management offices.

By integrating intelligent agents into the reporting workflow, the application will provide timely insights, trends, and summaries, while also offering visual and data-driven feedback. The goal is to reduce the cognitive and technical barriers typically associated with production analysis and to empower users to make informed decisions quickly and intuitively.


Designed with scalability in mind, this solution will lay the foundation for broader AI-driven operational tools, while maintaining a focused, practical scope suitable for short-term implementation.

Technologies to be used

React, Python, LLM APIs, Redshift, PostgreSQL, Docker, Fast Api, MPC

The project can be done by 1 or preferably 2 students

EOC - Ente Ospedaliero Cantonale, Area ICT

	
Website	https://www.eoc.ch/
Contact	Talal, El Afchal, Talal.EIAfchal@eoc.ch
Number of available positions	2
Address	Via Lugano 4B, 6500 Bellinzona
Mode of Work	In Presence
Languages Requested	Italian
Previous Field Project Atelier SA5 participation	2019, 2020, 2021, 2023

Company Description

The EOC is the multisite hospital in Ticino where it has a presence with its institutions throughout the entire canton with a total of 1,000 beds. Thanks to the commitment and expertise of its more than 5,000 employees and their focus on human relations, the EOC ensures quality health care for 380,000 patients a year.

Project Title

Digital Health: collaborazione allo sviluppo della cartella clinica digitale

Project Description

Il presente progetto si inserisce nel contesto dell'innovazione digitale in ambito sanitario, con particolare riferimento allo sviluppo e all'ottimizzazione della Cartella Clinica (CC) del paziente presso l'Ente Ospedaliero Cantonale (EOC).

Il progetto mira a contribuire allo sviluppo di specifiche componenti della CC, collaborando attivamente con il team responsabile della progettazione e realizzazione della soluzione.

Le attività si svolgono all'interno di un team multidisciplinare composto da sviluppatori software, analisti di processo, specialisti UX/UI e professionisti sanitari, con l'obiettivo comune di fornire strumenti tecnologici innovativi e sicuri per la gestione integrata delle informazioni cliniche.

Obiettivi del progetto:

- contribuire allo sviluppo di parti del prodotto digitale della CC
- migliorare l'esperienza utente per operatori sanitari (medici, infermieri, ...)
- garantire qualità, sicurezza e integrità delle informazioni
- promuovere soluzioni tecniche scalabili, sostenibili e conformi agli standard del settore

Attività previste:

- collaborazione allo sviluppo di funzionalità software sia lato backend che frontend
- contributo alla scrittura e manutenzione di test automatici (unit test, test di integrazione, end-to-end)
- partecipazione attiva a meeting operativi e cerimonie Agile (es. daily stand-up, sprint planning, review).
- coinvolgimento in sessioni di code review, pair programming e momenti di condivisione delle conoscenze tecniche
- supporto alla stesura della documentazione tecnica

L'esperienza mira a fornire non solo competenze di programmazione, ma anche una visione concreta e pratica del lavoro in un ambiente professionale complesso e orientato alla qualità.


Technologies to be used

Backend: Java, Spring Boot

Frontend: Typescript, ReactJS

SQL e banche dati (MongoDB e MariaDB)

Ex Machina Sagl

	
Website	https://exmachina.ch/
Contact	Marco Celeri marco.celeri@exmachina.ch
Number of available positions	1
Address	Quartiere Maghetti 20, 6900 Lugano
Mode of Work	In Presence
Languages Requested	Italian and English
Previous Field Project Atelier SA5 participation	2014, 2016, 2017, 2018, 2019, 2020, 2021, 2023, 2024

Company Description

Centro di competenza per le tecnologie open source, cloud computing, blockchain e AI. Dal 2005 serviamo aziende multinazionali e pubbliche amministrazioni in Svizzera e all'estero.

Project Title

Machine Learning and Artificial Intelligence Internship at Ex Machina

Project Description

Ex Machina, with twenty years of experience in software development, opens its doors to the AI.Lab team for an immersive internship in the world of Machine Learning and Artificial Intelligence.

The AI.Lab team is an internal unit established two years ago, focused on research, development, and implementation of solutions based on intelligent algorithms.

The intern will be integrated into the team, actively participating in internal dynamics, from knowledge-sharing meetings to actual development activities. The experience offered covers the entire lifecycle of a Machine Learning project, providing a comprehensive overview of the challenges and opportunities in the field.

Activities include the preparation and maintenance of datasets for model training, the training of small-scale machine learning models to solve specific problems, the design of complex solution architectures based on ML/AI technologies, the development of these solutions, DevOps/MLOps activities for infrastructure management, and finally, the development and evaluation of tests and benchmarks.

The work will be primarily in a Python environment, with a smaller component in Java. The AI.Lab has developed an internal framework, Cosmo42, which standardizes and speeds up project development. The use of Cosmo42 will allow the intern to learn advanced development methodologies and contribute efficiently to ongoing projects.

This experience represents a unique opportunity to acquire practical and theoretical skills in the field of Artificial Intelligence, working alongside experienced professionals and actively contributing to innovation.

Technologies to be used


Python (PyTorch, Transformers, FastAPI)

Open Source models (mainly from Huggingface.co) and closed LLM models (OpenAI/Gemini/Claude/etc.)

Java (marginal) (Spring Framework)

DevOps/MLOps (Linux shell scripts, Docker)

InCatalyst GmbH

	
Website	https://in-catalyst.com
Contact	Adam Novak
Number of available positions	2
Address	Via La Santa 1 6928 Viganello
Mode of Work	Remote
Languages Requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

InCatalyst is a LegalTech company that helps patent firms acquire more clients at a lower cost. We have built an interactive software (based on local LLMs, RL, and standard NLP) that patent attorneys to onboard and validate new clients in a fast and efficient manner. The clients can search interactively through our local database of 110+ million patents to understand if their invention is new. Once onboarding is done, the software connects the client to a patent attorney.

Project Title

InCatalyst: a local multi-agent architecture for patent search

Project Description

Problem: When companies want to patent something, they must first check if their invention has already been patented or not. The existing tools that companies use are either inaccurate (they are not good at retrieving similar patents), unintuitive, or time-consuming to use.

Our Solution & Technology: We have created an interactive patent search system that performs information retrieval through conversation. Our AI model asks the user questions about his or her invention, and with every iterative response, we continuously update the patent search results. Additionally, using all the information we collected, we compare and contrast existing patents to tell the user whether his or her invention is patentable or not. All our AI/ML models (LLMs, RL, Encoder/Decoders) and data (110+ million patents) are kept locally on our in-office hardware.

Business Model: We sell our software to patent firms so that they can use it to attract new clients. They let companies sign up and go through the initial stages of a patent search for free. This way, patent firms can collect information on new companies and potentially convert them to clients faster. We charge a commission to the patent firm if the company is converted to a client.

New projects: we are looking to improve several key areas of our software.

- 1) improve the speed, robustness, and security of our hardware infrastructure, which runs our AI models and stores our large database of patents.
- 2) improve design and UX/UI on frontend
- 3) improve the accuracy of our information retrieval model, based on Transformer embeddings
- 4) build a new model that can perform information retrieval on images and search for similar patent drawings.

Technologies to be used

WebDev: Flask, Vue.js, Postgresql

ML/AI: Information Retrieval, Image Recognition & Computer Vision, LLMs, NLP

The Tithe Value PLC

	
Website	www.thetithevalue.com
Contact	Project 1) Alfredo Villa Project 2) avlugano@gmail.com
Number of available positions	Project 1) 2 Project 2) 2
Address	Jump Accounting, 131, Finsbury Pavement, London, England, EC2A 1NT
Mode of Work	Remote
Languages Requested	Italian and English
Previous Field Project Atelier SA5 participation	None

Company Description

A holding Company of Tech Startups. We invest in highly selected startups with innovative business models and international scalability potential. This portfolio component serves as the acceleration factor that, even with a few global successes, can generate extraordinary extra returns for investors.

Project 1

Project Title

Innovative Crowdfunding platform on shared revenue

Project Description

We are developing a platform and a website for an innovative way to raise funds from other people/investors for individuals, start-up, small companies, professionals.

We are not offering, like others crowd funding platform, to investors traditional financial assets, like bonds, loan, equity, with all the hassle, risks and regulation related to those instrument, but a shared % of the revenue of the project for a defined period of time.

A small AI tool will establish the optimum relationship between the amount of % and the time

Technologies to be used

To be defined with the students

Graphics capabilities and AI are a plus

Project 2

Project Title

Creation of a new utility token related to lotteries

Project Description


To create from the scratch with the Company a new utility token that allows the token's owner/investors to play in the same time on the major world lotteries, with a multiple shared system run by AI

Technologies to be used

To be determined with the students

Crypto and AI knowledge will be a plus

Università della Svizzera italiana

 Università della Svizzera italiana	
Website	https://www.usi.ch
Contact	Massimo Caprari, massimo.caprari@usi.ch
Number of available positions	3
Address	Via Buffi 13, 6900 Lugano, Svizzera
Mode of Work	Remote
Languages Requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

L'Università della Svizzera italiana (USI) è una delle dodici università pubbliche ufficialmente riconosciute dal sistema accademico svizzero, coordinato da swissuniversities. È organizzata in sei Facoltà ed è attiva in diverse aree di studio e di ricerca, in particolare: architettura, comunicazione, diritto, economia, informatica, medicina e biomedicina, salute pubblica, scienza computazionale, scienza dei dati e studi umanistici.

Project Title

Artificial Intelligence for Data Visualization

Project Description

1. Project Description.

In view of recent developments in artificial intelligence, it is deemed necessary to assess opportunities and risks related to the integration of one or more artificial intelligence systems for the strategic management of the University's data assets, with a particular focus in the development and maintenance of data quality standards, possible innovative storage systems and extraction of strategic indicators in accordance with related regulations.

As part of these evaluations, it is intended to launch a pilot project, conducted through the field-project format by students from the Faculty of Informatics aimed at exploring the opportunities of the technology in the area of Business Intelligence, limited to the calculation of KPIs and the creation of indicators and graphs from raw data from a structured database. The system will have, as its goal, the dynamic creation of KPIs and visualizations through an interface that allows user input of textual instructions entered at a prompt.

2. Induction of the working group.

The working group will be supervised in the field project by employees of the University's IT Service with regular meetings to contribute to the smooth running of the project and, where appropriate, provide support or specific instructions.


3. Specific objectives.

- Creation of the working group
- Analysis of the relevant regulatory environment
- Review of solutions currently available on the market
- Development of a prompt-based system that translates text instructions into SQL queries and generates graphs/KPIs.
- Integration of libraries or visualization tools to create clear and interactive outputs.
- Creating an initial prototype and testing functionality.
- Verifying the correctness and efficiency of queries, calculated KPIs and generated graphs.
- Drafting of technical and operational documentation of the system.
- Presentation of the prototype with practical examples of use and concrete results.

Technologies to be used

SQL, Microsoft Fabric, Python, R, SSIS Packages

WellD Sagl

	
Website	https://www.welld.ch/
Contact	Matteo Codogno, matteo.codogno@welld.ch
Number of available positions	1
Address	Via Campagna 13, 6982 Agno
Mode of Work	In Presence
Languages Requested	English
Previous Field Project Atelier SA5 participation	2019, 2023

Company Description

We are a software house with almost 15 years of successful activity in Ticino and abroad. Our mission is to bring quality in software development, embracing continuous improvement practices and treating our customers' products as our own. We believe in continuous learning and in professional community building, and boost many training and knowledge-sharing activities. Our work spans from web to mobile apps, in domains like finance, healthcare, energy, industry automation and more.

Project Title

Comprehensive hardening of Overmind, an online AI chatbot game

Project Description

WellD is reinforcing Overmind, its AI-powered chatbot game available at overmind.welld.io, through a comprehensive hardening project aimed at enhancing security, resilience, and performance. A student participating in the project will actively contribute to these critical improvements.

Key areas of development include AI security hardening, such as adversarial training to defend against prompt injections and AI model manipulation. The student will help implement rate limiting and anomaly detection mechanisms to prevent abuse and ensure fair play.


Additionally, they will contribute to strengthening data encryption and secure authentication protocols to protect user interactions while optimizing scalability enhancements for smooth performance under high traffic. This hands-on experience will allow them to apply cutting-edge cybersecurity and AI robustness techniques, ensuring Overmind remains engaging, resilient, and secure for all players.

Technologies to be used

SpringAI, Kotlin, Postgres+PG-Vector, React JS, OpenAI models

We require the student to be at our Agno office for the time spent on the project. On Fridays, the student will also have the chance to take part in our bi-weekly Tech Lunches (free pizza!).

ZHAW / Center for Computational Health

	
Website	https://www.zhaw.ch/en/lsvm/institutes-centres/icls/computational-health
Contact	Norman Juchler, norman.juchler@zhaw.ch
Number of available positions	1
Address	Schloss, 8820 Wädenswil
Mode of Work	To be defined
Languages Requested	English
Previous Field Project Atelier SA5 participation	None

Company Description

The Research Centre for Computational Health addresses problems in medicine and biology using data-driven and mechanistic modeling. Important tools are machine learning for image and signal analysis, graphical networks, parameter estimation for differential equation systems and physiological simulation.

Project Title

Infrastructure for medical image analysis

Project Description

Our group is involved in several applied research projects in the field of medical image analysis, with a particular focus on cerebrovascular diseases, digital pathology, and orthopaedics. A common aspect of these projects is the need to manage and analyze large volumes of medical imaging data -often in close collaboration with clinical partners.

Internship students can contribute in various ways, depending on their interests and background. This may include:

- Supporting ongoing research through the development and evaluation of algorithms in image processing, machine learning, or computational geometry
- Assisting in the setup of software tools or infrastructures that facilitate the high-throughput analysis and management of large datasets
- Contributing to the design and implementation of data pipelines, annotation workflows, or interactive visualizations to support clinical decision-making

This internship offers the opportunity to gain practical experience in applied medical research, while working at the intersection of informatics and healthcare. A solid background in programming (Python/R) and an interest in data-intensive applications and applied medical research is recommended.

The specific focus of the project will be shaped collaboratively, taking into account current project needs as well as the student's interests and strengths, following an initial conversation.

Technologies to be used

To be defined. PyTorch, DICOM, VTK/PyVista, Docker, among others.

Companies Location

